DIRECT TESTIMONY OF

DARIN BURK

PIPELINE SAFETY PROGRAM MANAGER

ENERGY DIVISION

ILLINOIS COMMERCE COMMISSION

Illinois Commerce Commission on its own motion

vs.

The Peoples Gas Light and Coke Company

Citation for alleged violations of federal rules incorporated by the Illinois Commerce Commission regarding testing

WITNESS IDENTIFICATION

Q. What is your name and business address?

A. My name is Darin Burk. My business address is 527 E. Capitol Avenue, Springfield, IL.

Q. **By whom are you employed and in what capacity?**

A. I am employed by the Illinois Commerce Commission ("Commission") as Manager of the Pipeline Safety Program of the Energy Division. In my current position, I oversee the day-to-day operations of the Commission's Pipeline Safety Program, which performs audits and inspections in accordance with the Guidelines for State Programs issued by the U. S. Department of Transportation, ("USDOT") Pipeline and Hazardous Materials Safety Administration ("PHMSA"). The audits and inspections are conducted to ensure that jurisdictional Illinois natural gas system operators are meeting the minimum federal safety standards as prescribed by 49 CFR Parts 191.23, 192, 193, 199 and by the Illinois Gas Pipeline Safety Act.[1]

Q. **Please describe your education and experience.**

A. Prior to employment with the ICC, I was a Technician employed by Utility Safety and Design Inc. and the Southern Cross Corporation. Both Companies provide field consulting service for the natural gas industry. My duties at USDI included natural gas leak detection, corrosion control monitoring, pipeline installation, pressure testing, uprating of pipeline systems, polyethylene pipe fusion, welding and fusion joint testing, and line stopping. Since coming to work in the Pipeline

[1] 220 ILCS 20/1, et seq.

Safety Program at the Commission, I have received extensive technical training provided by the Pipeline and Hazardous Materials Safety Administration Training and Qualification ("PHMSA T&Q") branch of the USDOT. PHMSA T&Q conducts training and qualification of state and federal pipeline safety inspectors. The inspectors receive technical education relating to the application and enforcement of pipeline safety standards. My training at PHMSA T&Q included courses such as: Safety Evaluation of Gas Pipeline Systems, Gas Integrity Management, Welding and Welding Inspection of Pipeline Materials, Pipeline Failure Investigation Techniques, Pipeline Reliability Assessment, and Root Cause Incident Investigation. At the Commission, I held the position of Pipeline Safety Analyst for 17 years and was promoted to Pipeline Safety Program Manager in January of 2007. I have attached my *curriculum vitae* at Schedule 1.01 to this testimony.

PURPOSE OF TESTIMONY

Q. **What is the purpose of your testimony?**

A. The purpose of my testimony is to present Staff's position regarding the Peoples Gas Light and Coke Company ("Peoples") Exhibit 1.0, the direct testimony of Alfredo Ulanday, Exhibit 2.0, the direct testimony of Thomas Kerr, and Exhibit 3.0, the direct testimony of Keith Naeve.

REGULATORY AND ENFORCEMENT PROVISIONS

Q. **What authority or jurisdiction does the ICC have in this matter?**

A. Through the enactment of the Natural Gas Pipeline Safety Act ("Federal Act"), enacted as Public Law 90-481, Congress mandated gas pipeline safety regulation by the USDOT in 1968. The Federal Act provided for state pipeline safety regulation in states certified by USDOT. In 1969, the Illinois General Assembly enacted the Illinois Gas Pipeline Safety Act (Illinois Act"),[2] enacted as Public Act 76-1288. Subsection 3(a) of the Illinois Act[3] charged the Commission with adopting rules that are at least as inclusive and as stringent as the pipeline safety regulations adopted by the United States Secretary of Transportation, and required the Commission to seek federal certification to regulate pipeline safety within Illinois. Section 9 of the Illinois Act[4] required the Commission to prepare and file with the Secretary of Transportation the initial and annual certification and report required by Subsection 5(a) of the Federal Act. The Commission has maintained certification since the 1970s, under rules codified at 83 Ill. Adm. Code 590.10, et seq. To maintain the authority for enforcement of the Minimum Federal Safety Standards granted to the Commission under an agreement pursuant to Section 5 of the Federal Act[5] with the U.S. Department of Transportation Office of Pipeline Safety, the federal standards codified under 49 CFR Parts 191, 192, 193, and 199 have been adopted by the Commission pursuant to 83 Ill. Adm. Code 590.

COMPLIANCE RELATED ISSUES

[2] 220 ILCS 20/1, et seq.
[3] 220 ILCS 20/3
[4] 220 ILCS 20/9
[5] 49 U.S.C. §60105

Q. **Please describe the compliance related issues that initiated this proceeding.**

A. The Pipeline Safety Staff investigated a reported incident which occurred on March 3, 2010 at 358 West Jackson Blvd. Chicago, Cook County, Illinois. Staff determined that Peoples was in apparent violation of 49 CFR §192.13(c) due to Peoples' crew's failure to follow the plan, procedures and programs that Peoples is required to establish under 49 CFR Part 192. Specifically, Staff determined that Peoples employees failed to follow "Peoples' Main Work 7.100" entitled "Procedure for Uprating Steel Mains from Low Pressure to Medium Pressure." Staff also determined that Peoples employees failed to follow 49 CFR §192.515(a) by failing to take necessary precautions to protect its employees and the general public during a pressure test.

Q. **Is Peoples contesting the alleged violations?**

A. Yes. Mr. Naeve states that People Gas must comply with Subpart K of Part 192 of the USDOT regulations.[6] Mr. Naeve further states that Subpart K calls for pressure testing and briefly describes a pressure testing process.[7] Mr. Naeve briefly describes the blocking or bracing of an end cap and states that blocking and bracing is not required during a pressure test performed as part of an uprating procedure.[8] Further, Mr. Naeve states that Subpart J, Testing Requirements of 49 CFR Part 192 does not apply to pressure tests performed in

[6] Peoples Ex. 3.0 at 4.
[7] Id. at 4, 5
[8] Id. at 5.

connection with uprating.[9] 49 CFR §192.515(a) is included in Subpart J. 49 CFR §192.515(a) requires the operator to ensure that every reasonable precaution is taken to protect its employees and the general public during pressure testing. Mr. Naeve further asserts that Subpart J is expressly limited to test requirements for new segments of pipeline or segments that have been relocated or replaced and that it does not apply to uprating an existing segment of pipeline.[10] Based upon this contention, Mr. Naeve argues that blocking or bracing of a welded end cap is not required because 49 CFR Section 192.515 is expressly limited to testing performed under Subpart J of Part 192 and is not applicable to testing performed in connection with uprating pursuant to Subpart K and that there is no blocking or bracing requirement contained in Section 192.515.[11]

Afredo Ulanday also offers testimony for Peoples. Mr. Ulanday testifies that, based on his understanding of the Peoples procedures, blocking or bracing of a welded end cap is not required.[12]

Q. **In your opinion, is Mr. Naeve's and Mr. Ulanday's interpretation of the Title 49 requirements correct?**

A. No.

Q. **Please explain your interpretation of the applicable regulations.**

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9 Id.
10 Id.
11 Id. at 5-6
12 Peoples Ex. 1.0 at 5.

A. The requirements contained under Subpart J of 49 CFR Part 192 are applicable to any pressure testing being performed on a pipeline facility. 49 CFR §192.501, describing the scope of Subpart J, states that: "[t]his subpart prescribes minimum leak-test and strength-test requirements for pipelines*".*

49 CFR §192.501 makes clear that Subpart J applies by its terms to all pipelines: that is, new pipelines, pipelines that have been replaced or relocated, and uprating, without limitation.

For example, Subpart J requirements are not specifically identified by subpart or section number under 49 CFR §192.725 – Testing requirements for reinstating service lines. Paragraph (a) of Section 192.725 simply states: "[e]xcept as provided in paragraph (b) of this section, each disconnected service line must be tested in the same manner as a new service line, before being reinstated*."*

If the testing requirements under Subpart J were not to apply universally to Part 192 with reference to testing, specific pressure testing requirements would need to be included under 49 CFR §192.725 to ensure that the pressure testing was conducted appropriately, but no such separate testing requirements exist. Pressure testing requirements of 49 CFR §192.515 included under Subpart J therefore apply to all pressure testing. It is, as the Administrative Law Judge observed in his March 17, 2011 Ruling,[13] not reasonable to conclude that a section of 49 CFR Part 192

[13] *See* ALJ Ruling at 2 (March 17, 2011)("Part 192 is thus not implemented by applying what might appear to be the most immediately pertinent subheading and ignoring all others. Rather, it is implemented by applying all provisions, from whatever subpart, that reasonably apply to the relevant circumstances. Nothing in Part 192 (or the broader regulatory framework of which it is a part), states or implies that its subparts are, in general, mutually exclusive.")

which specifically addresses pressure testing requirements generally in some way does not apply to subsequent subparts under the same title.

Q. **Do you agree with the Peoples witnesses' assertion that bracing and blocking are not required during the pressure testing?**

A. No.

Q. **Why not?**

A. 49 CFR §192.515(a) states in part that: "[i]n conducting tests under this subpart, each operator shall ensure that every reasonable precaution is taken to protect its employees and the general public during the test."

49 CFR 192.557(b) states in part that:

> Before increasing operating pressure above the previously established maximum allowable operating pressure, the operator shall:…(4) Reinforce or anchor offsets, bends and dead ends in pipe joined by compression couplings or bell spigot joints to prevent failure of the pipe joint, if the offset, bend or dead end is exposed in an excavation[.]

Some mechanical fittings, also referred to as compression couplings, are not rated for longitudinal pullout strength. When unexposed compression couplings are present and only the pipe end is exposed in a pressure test, the possibility of pipeline movement is present when internal pressure is placed against the end cap. Proper compliance with 49 CFR §192.557(b)(4) prevents this possibility. Peoples witness Thomas Kerr testifies that the crew was pressure testing a 20" main.[14] Mr. Kerr states that welded end caps had been installed on the main.[15]

[14] Peoples Ex. 2.0 at 3.

Mr. Kerr further states that the crew introduced 100 psi of compressed air into the pipe segment and that there was then a compression coupling failure and the pipe separated.[16] According to Peoples Ex. 1.3, introducing 100 psi of compressed air against a 20" end cap placed 31,400 psig of internal force on the end cap on the main.

Additionally, Peoples Distribution Department 7100, entitled "Procedures For Uprating Steel Mains From Low Pressure To Medium Pressure, Purpose", states that:

> This Order specifies the steps to follow when converting an existing low pressure steel main to medium pressure. All work to be done in accordance with Pipeline Safety Regulations Part 192.557, subpart K. This order only applies to steel mains. Polyethylene, cast iron and ductile iron mains are not approved for uprating in PGL system.

As stated above, Subpart K requires end blocking if a dead end pipe is exposed in an excavation. Peoples ordered the excavation and exposure of the main and the end of the main remained exposed in the excavation to allow the installation of the pressure testing equipment at the welded end cap. The requirements of 49 CFR §192.557(b) (4), requiring the reinforcement or anchoring of the dead end main with the end cap, therefore clearly apply.

In addition to the requirement of the CFR, Peoples Distribution Department 7100, entitled "Procedures For Uprating Steel Mains From Low Pressure To Medium Pressure", and more specifically the subsection of that document titled, IMPORTANT states, in bold letters that:

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15 Id.
16 Id. at 4.

PRIOR TO PRESSURE TESTING, ENSURE THAT ALL BENDS, TEES, COMPRESSION COUPLINGS, AND ENDS ARE PROPERLY BLOCKED AND BRACED.

Accordingly, it is clear that Peoples itself recognizes the importance of blocking and bracing when engaged in pressure testing.

Q. **You cite 49 CFR §192.557(b) (4) as the regulation that requires bracing the end of the main. The section appears to apply specifically to pipe joined by compression couplings. Is that your interpretation of the requirement?**

A. Yes.

Q. **The testimony of Mr. Kerr and Mr. Ulanday indicates that the end cap was installed using a welding process rather than by affixing a compression coupling. Why do you consider the requirements of 49 CFR §192.557(b) (4) applicable?**

A. While working as a Pipeline Safety Analyst, I periodically reviewed detailed mapping maintained by Peoples and Peoples' construction standards. The mapping of Peoples' gas system identifies compression couplings installed in that system. Peoples' construction standards also include instructions for installing various types of compression couplings. I have also witnessed the installation of compression couplings in Peoples' system.

Mr. Kerr testifies that a compression coupling separated during the pressure test.[17] The findings of the incident investigation discussed in the Staff Report submitted to the Commission to initiate this case also indicate a failure of a

[17] Peoples Ex. 2.0 at 4.

compression coupling. Since a compression coupling, even though unexcavated and unexposed, was present on the main when the end of the main was exposed, the requirements found in 49 CFR §192.557(b) (4), which requires bracing and anchoring, clearly applies.

Peoples Ex. 1.3 Main Work Order 1.090, subsection titled Steel Mains, also states:

> *If all joints of the main are not welded, reinforce all compression fittings located less than 44' from the end of main, by installing joint harnesses (Refer to Main Work Order 1.092).*

The incident investigation performed by Staff indicated that the segment of pipe was rapidly thrust forward. The segment struck one worker and dislodged timber shoring placed in the excavation. The impact caused the timbers to fall, resulting in the fatal injury of one employee and the serious injury of another. The segment of pipe was 9.5 feet in length. This indicates that the compression coupling was located well within the 44 foot tolerance zone discussed in Peoples Ex. 1.3 and the pipe therefore should have been harnessed.

Q. **Mr. Ulanday states that the Peoples Gas procedures have been submitted to the Commission and comments regarding the adequacy or sufficiency of the procedures have not been provided.[18] Has the Commission received People Gas procedures and provided comment?**

A. Peoples Gas has submitted their procedures to the Commission's Pipeline Safety Program over the years and the Pipeline Safety Program has reviewed the

[18] Peoples Ex. 1.0 at 7.

procedures and provided comment on several occasions regarding various Peoples procedures. When discussing the specific procedures provided, such as Exhibits to 1.1 – 1.3, it is most likely that Staff has reviewed the procedures. It would be virtually impossible to review all of the reports and correspondence with Peoples since 1971 to determine if the specific sections of the procedures were reviewed and if feedback was provided relating to the exhibits, as this would entail a review of thousands of documents. However, based on the fact that Pipeline Safety Staff use a very detailed inspection form which requires the Staff to verify that all applicable sections of the Code of Federal Regulations are addressed by the operators plan, I am confident that the procedures have been reviewed.

Q. **Is the Pipeline Safety Staff required by any statute or regulation to approve the procedures submitted by the operators?**

A. No. Staff does not approve or disapprove operator procedures. Staff's review typically involves determining if required procedures exist and examining the language of the procedures to determine if the intent of the code requirements appears to have been met. If it appears from their language that the procedures do not meet the intent of the code requirements, feedback is provided to the operator and revisions are requested. In some cases, actually witnessing the field application of a specific procedure is required to determine if the intent is met and determine if revisions are to be requested. However, Staff does not require each operator to field-demonstrate how each procedure is actually implemented.

Q. **Based on your experience and training, if you had reviewed Peoples Ex. 1.1 – 1.3, would you have provided feedback regarding the blocking or bracing of the end of a main.**

A. No.

Q. **Why not?**

A. The procedures include requirements for blocking and bracing during a pressure test. Peoples Main Work Order 1.090 includes the section titled: Steel Mains. Under that section, the second bullet item states: [b]racing is not required if all joints of the main are welded and end caps are buried. As a precaution during testing, brace exposed main end caps.

The third bullet item states that: *[i]f all joints of the main are not welded, reinforce all compression fittings located less that 44' from the end of the main, by installing point harnesses (Refer to Main Work Order 1.092)".*

I interpret those requirements to state that if the end of the main is exposed, it must be braced or blocked. Bracing of compression couplings less than 44 feet from the exposed end of the main is also required.

Peoples Ex. 1.2, Main Work Order 1.093 is titled: "Welded Caps On Steel Mains For Pressure Testing." It includes a picture of a welded end cap. The bullet item number 2 included in this work order states in all capital letters and bold print:

SEE MAIN WORK ORDER 1.090 FOR BLOCKING AND BRACING REQUIREMNETS.

All of the references to the blocking and bracing requirements included in the Peoples procedures noted above indicate that the intent of the code sections cited above has been met and no feedback would be required upon completion of Staff's review of Peoples' procedures. The problem is not Staff's alleged failure to review Peoples' procedures – which Staff in any case did – but rather Peoples' clear failure to follow them.

Q. **Please summarize your testimony.**

A. Mr. Naeve testifies that the requirements of 49 CFR Part 192, Subpart J do not apply to pressure testing conducted in conjunction with an uprating procedure. That interpretation is not correct: Subpart J applies to all pressure testing unless specific instructions to the contrary are included under some other specific Section. In the situation being discussed in this testimony, Section 192.515(a), included under Subpart J, requires the operator to take reasonable precautions to protect its employees and the general public during a pressure test.

Peoples Main Work Order 7.100 states that the requirements of 49 CFR Part 192 Subpart K must be followed when uprating a main from low pressure to medium pressure. Subpart K includes the necessary measures an operator is required to take prior to performing an uprating, <u>including</u> prior to pressure testing under Subpart J. However, Peoples employees did not in this case comply with Main Work Order 7.100, regarding the requirements of 49 CFR Part 192 Subpart K about reinforcing and anchoring dead ends exposed in an excavation. Peoples' failure to follow (1) requirements of Peoples Main Work Order 7.100, (2) other Peoples procedures referenced in Work Order 7.100, and (3) 49 CFR Part 192

Subpart K requirements referenced in Work Order 7.100 together constitute a violation of 49 CFR §192.13(c), which clearly requires the operator to follow plans, procedures and programs that it is required to establish under 49 CFR Part 192.

Peoples' construction procedures include requirements for installing compression couplings, but as this incident tragically reveals, Peoples' gas distribution system mapping includes the locations of only some of the compression couplings installed in the company's distribution system.

Although the compression coupling that failed was not included in the distribution system drawings, Peoples is aware that compression couplings exist throughout its gas pipeline system. Peoples Main Work Order 1.090 includes a requirement to reinforce any compression couplings located less than 44 feet from the end of a main during a pressure test. The compression coupling which ultimately failed was not identified via excavation or any other on-site activity. Peoples employees should have braced the end of the main as a precaution prior to testing a largely still-buried and unexposed main with an exposed end to ensure that the main would not move if a compression fitting was present in its unexposed portion.

The segment of main was thrust forward with significant force upon failure of a compression coupling. The main was not braced or harnessed to prevent such movement. The movement of the main during the pressure test resulted in serious injury to one Peoples employee and the fatal injury of a second employee. It is my professional opinion that Peoples did not undertake

reasonable precautions to protect its employees as required under 49 CFR §192.515. The CFR requirements and Peoples own procedures, regarding both bracing and harnessing if the end of the main is exposed, were not followed.

Q. **What penalties may be assessed against Peoples?**

A. 49 U.S.C. §60122, which was adopted by Section 7 of the Illinois Act,[19] allows for civil penalties of not more than $100,000 for each violation, for a maximum of $1,000,000. Both the Illinois and the federal statute state that each day the violation persists is also a separate violation.[20]

Q. **In this situation what would be considered a violation?**

A. Peoples failure to follow the requirements included in and referenced by Peoples Main Work 7.100 is a direct violation of 49 CFR §192.13 entitled "*What general requirements apply to pipelines regulated under this part?"* Subsection (c) states that: "[e]ach operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."

Peoples' violation of this code section on March 3, 2010 would be considered a single violation.

Peoples failed to identify the presence of a compression coupling within 44' of the exposed end of the main. Peoples failed to brace or harness the main segment joined by a compression coupling to ensure the safety of its employees. This constitutes a direct violation of 49 CFR §192.515 entitled *"Environmental*

[19] 220 ILCS 20/7.
[20] 49 U.S.C. §60122(a), 220 ILCS 20/7(a).

protection and safety requirements." Subsection (a) states in part that [i]n conducting tests under this subpart, each operator shall insure that every reasonable precaution is taken to protect its employees and the general public during the testing.

Peoples violation of this code section on March 3, 2010, would be considered a single violation.

Q. **What is your recommendation as to what penalty should be assessed against Peoples?**

A. Given the tragic consequences of this violation, which include the serious injury of one employee and the fatal injury of a second employee, Staff recommends the maximum penalty be imposed for the violations of 49 CFR §192.13(c) and 49 CFR §192.515(a). Civil penalties in the amount of $200,000 should be assessed.

Q. **Does this conclude your testimony?**

A. Yes, it does.